

REMARKS

Claims 1-22 are now pending in the application. Claims 1-4, 6, 8-11, 13, 16 and 21 stand rejected to. Claims 5, 7, 12, 14, 15 and 22 are objected to. Claims 17-20 are allowed. The Examiner is respectfully requested to reconsider and withdraw the rejection(s) in view of the amendments and remarks contained herein.

DRAWINGS

1. The drawings stand objected to for certain informalities. Applicants have attached revised drawings for the Examiner's approval. The "Replacement Sheets" include Figures 4, 5 and 8. Figure 4 has been amended to more clearly illustrate index pins 118, described in the specification at paragraph [0027]. Figure 5 has been amended to include the reference numeral 130, as described in the specification at paragraph [0031]. Figure 8 has been amended to include the reference numeral 200, as described in the specification at paragraph [0037].

Additionally, the Office objected to the drawings stating that the reference numeral 24 was not shown as mentioned in the specification. Applicants have amended paragraph [0026], as set forth above, to change the incorrect reference numeral 24 to correct reference numeral 34. Reference numeral 34 is shown in Figure 4.

Furthermore, the Office objected to the drawings stating that the reference numeral 118 is shown in drawings but not described in the specification. This objection is respectfully traversed. Applicants respectfully submit that the reference numeral 118 is described in the specification at paragraphs [0027] and [0029].

For the reasons set forth above, Applicants respectfully request that the objections to the drawings be withdrawn.

SPECIFICATION

2. The specification stands objected to for certain informalities. Applicants have amended the specification, as set forth above, according to the Examiner's suggestions. Specifically, paragraph [0019] has been amended to recite, "clamping block 16", instead of "clamping block 34"; paragraph [0020] has been amended to recite, "saddles 52", instead of "cradles 52"; paragraph [0021] has been amended to delete the word "and"; paragraph

[0026] has been amended to recite, "tubing 34", instead of "tubing 24"; and paragraph [0027] has been amended to have a "." at the end of the paragraph. Therefore, reconsideration and withdrawal of this objection are respectfully requested.

CLAIM OBJECTIONS

3. Claims 5 stands objected to for certain informalities. Claim 5 has been amended, as set forth above to insert the word "of" before the words "each said", in accordance with the Examiner's suggestion. Therefore, reconsideration and withdrawal of this objection are respectfully requested.

REJECTION UNDER 35 U.S.C. § 102

4. Claim 10 stands rejected under 35 U.S.C. § 102(b) as being anticipated by Flowers et. al. (U.S. Pat. No. 4,190,186). This rejection is respectfully traversed.

As amended, Claim 10 recites, "A method for cutting and orbitally welding thin-walled tubing using a system including a plurality of clamping blocks, at least one tooling plate and a welding cassette, said method comprises; clamping the tubing in the clamping blocks after the clamping blocks have been coupled to the tooling plate; removing the clamping blocks from the tooling plate while the tubing remains clamped in the clamping blocks; mounting one of the cutting blocks in a cutting machine and cutting the tubing to a desired length while the tubing remains clamped in the clamping blocks; removing the one cutting block from the cutting machine while the tubing remains clamped in the clamping blocks; and orbitally welding mating pieces of the tubing while the tubing remains clamped in the clamping blocks."

Flowers et. al. does not describe, show or suggest a method for cutting and orbitally welding thin-walled tubing including clamping tubing in clamping blocks coupled to a tooling plate, then removing the clamping blocks from the tooling plate while the tubing remains clamped in the clamping blocks. Flowers et. al. additionally does not describe, show or suggest mounting one of the cutting blocks in a cutting machine and cutting the tubing to a desired length while the tubing remains clamped in the clamping blocks. Furthermore, Flowers et. al. does not describe, show or suggest removing the one cutting block from the cutting machine while the tubing remains clamped in the

clamping blocks and orbitally welding mating pieces of the tubing while the tubing remains clamped in the clamping blocks.

Rather, Flowers et. al. describes clamping a tube 16 in anneal clamps 12 and 14 where current is connected to tube 16 to anneal and stretch tube 16. With the completion of the anneal and stretch cycle, weld clamps 18 and 20 are closed on tube 16. Thereafter, anneal clamps 12 and 14 are opened to permit tube 16 to be removed from anneal clamps 12 and 14. Tube 16 is now in the grip of weld clamps 18 and 20 where tube 16 is cut and deburred, if necessary. A similar operation is performed on a tube 61. The ends of tubes 16 and 61 are disposed in opposed relationship by weld clamps 18 and 20 where the tubes 16 and 61 are welded together. Thus, Flowers et. al. does not describe, show or suggest removing clamping blocks from a tooling plate while tubing remains clamped in the clamping blocks, mounting one of the clamping blocks in a cutting machine to cut the tubing, removing the cutting block from the cutting machine while the tubing remains clamped in the clamping blocks, and then orbitally welding mating pieces of the tubing while the tubing remains clamped in the clamping blocks.

For the reasons set forth above, Applicants submit that amended Claim 10 is patentable over Flowers et. al.. Therefore, Applicants respectfully request that the §102 rejection of Claim 10 be withdrawn.

REJECTIONS UNDER 35 U.S.C. § 103

5. Claim 11 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Flowers et. al. (U.S. Pat. No. 4,190,186) in view of Burns (U.S. Pat. No. 4,290,291). This rejection is respectfully traversed.

Claim 11 depends directly from Claim 10. Claim 10 has been amended as set forth above. As set forth above, Flowers et. al. does not describe, show or suggest the limitations recited in amended Claim 10. Additionally, Burns does not describe, show or suggest the limitations recited in amended 10. Rather, Burns describes an apparatus 11 for holding in alignment a stack of stator laminations 13 so that clamp bolt holes therein are accurately aligned. The apparatus 11 includes a precision four post die set that includes a lower die shoe 17. Anchored to the lower shoe 17, is a lower block 22

which has anchored therein bullet nose pins 23 which simulate the number, size and shape of bolts that will be used in mounting stator laminations 13 in a compressor housing. Thus, neither Flowers et. al. nor Burns describe, show or suggest the limitations recited in amended Claim 10 as set forth above.

Therefore, for the reasons set forth above, Applicants submit that Claim 10 is patentable over Flowers et. al. in view of Burns. When the recitations of Claim 11 are considered in combination with the recitations of Claim 10, Applicants submit that Claim 11 is likewise patentable over Flowers et. al. in view of Burns.

For the reasons set forth above, Applicants respectfully request that the §103 rejection of Claim 11 be withdrawn.

6. Claims 1, 6, 8, 9, 13, 16 and 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Flowers et. al. (U.S. Pat. No. 4,190,186) in view of Benway et. al. (U.S. Pat. No. 4,868,367). This rejection is respectfully traversed.

As amended, Claim 1 recites, "A system for orbitally welding thin-walled tubing, said system comprising: a plurality of clamping blocks fixedly clamped onto said tubing and configured to continuously hold said tubing while said tubing is trimmed using a first device and then moved from said first device to a second where said tubing is orbitally welded; at least one tooling plate configured to have said clamping blocks mounted thereto such that said tubing is attached to said tooling plate and aligned to be net length trimmed; and a welding cassette configured to retain said clamping blocks and align said tubing during orbital welding."

Neither Flowers et. al. nor Benway et. al. describe, show or suggest a system for orbitally welding thin-walled tubing that includes a plurality of clamping blocks fixedly clamped onto tubing and configured to continuously hold the tubing while the tubing is trimmed using a first device and then moved from the first device to a second where the tubing is orbitally welded. Additionally, neither Flowers et. al. nor Benway et. al. describe, show or suggest such a system including a welding cassette configured to retain the clamping blocks and align the tubing during orbital welding.

More specifically, Flowers et. al. does not describe, show or suggest a plurality of clamping blocks fixedly clamped onto tubing and configured to continuously hold the tubing while the tubing is trimmed using a first device and then moved from the first

device to a second where the tubing is orbitally welded. Rather, Flowers et. al. describes clamping a tube 16 in an anneal clamps 12 and 14 where current is connected to tube 16 to anneal and stretch tube 16. With the completion of the anneal and stretch cycle, weld clamps 18 and 20 are closed on tube 16. Thereafter, anneal clamps 12 and 14 are opened to permit tube 16 to be removed from anneal clamps 12 and 14. Tube 16 is now in the grip of weld clamps 18 and 20 where tube 16 is cut and deburred, if necessary. A similar operation is performed on a tube 61. The ends of tubes 16 and 61 are disposed in opposed relationship by weld clamps 18 and 20 where the tubes 16 and 61 are welded together.

Additionally, Benway et. al. does not describe, show or suggest a welding cassette configured to retain clamping blocks that are fixedly clamped onto the tubing and align the tubing during orbital welding. Rather, Benway et. al. describes a clamping device for holding a cylindrical work piece including a tube clamp assembly 10. The tube assembly 10 includes a pair of clamping halves 22 and 24. Each of the clamping halves 22 and 24 carries a rigid collet element 48 and 50 connected to their respective clamp half by socket head machine screws. Thus, the collets 48 and 50 are fixedly connected to the clamping halves 22 and 24.

Therefore, neither Flowers et. al. nor Benway et. al. describe, show or suggest a system for orbitally welding thin-walled tubing that includes a plurality of clamping blocks fixedly clamped onto tubing and configured to continuously hold the tubing while the tubing is trimmed using a first device and then moved from the first device to a second where the tubing is orbitally welded, and a welding cassette configured to retain the clamping blocks and align the tubing during orbital welding.

For the set forth above, Applicants submit that, as amended, Claim 1 is patentable over Flowers et. al. in view of Benway et. al..

Claims 6, 8 and 9 depend directly from Claim 1. When the recitations of Claims 6, 8 and 9 are considered in combination with the recitations of Claim 1, Applicant's submit that Claims 6, 8 and 9 are likewise patentable over Flowers et. al. in view of Benway et. al..

7. Regarding Claims 13 and 16, Claims 13 and 16 depend directly from Claim 10. The limitations recited in Claim 10 are similar to the limitations recited in Claim 1. In

accordance with the remarks set forth above with respect to Claim 1, Applicants respectfully submit that Claim 10 is likewise patentable over Flowers et. al. in view of Benway et. al..

When the recitation of Claims 13 and 16 are considered in combination with the recitations of Claim 10, Applicants submit that Claims 13 and 16 are likewise patentable over Flowers et. al. in view of Benway et. al..

8. Regarding Claim 21, as amended Claim 21 recites, "A system for orbitally welding thin-walled tubing, said system comprising: a plurality of clamping blocks configured to fixedly clamp onto and continuously hold a pair of lengths of tubing, each of said clamping blocks including a first positioning system; and a welding cassette having a pair of second positioning systems for cooperating with said first positioning systems to precisely align said lengths of tubing relative to each other, and to an orbital welding head disposed adjacent said welding cassette, when said lengths of tubing are positioned in said welding cassette, thereby enabling said lengths of tubing to be orbitally welded to one another."

Neither Flowers et. al. nor Benway et. al. describe, show or suggest a system for orbitally welding thin-walled tubing including a plurality of clamping blocks including a first positioning system and a welding cassette having a pair of second positioning systems for cooperating with the first positioning systems to precisely align the lengths of tubing relative to each other, and to an orbital welding head disposed adjacent the welding cassette. Rather, Flowers et. al. describes clamping a tube 16 in anneal clamps 12 and 14 where current is connected to tube 16 to anneal and stretch tube 16. With the completion of the anneal and stretch cycle, weld clamps 18 and 20 are closed on tube 16. Thereafter, anneal clamps 12 and 14 are opened to permit tube 16 to be removed from anneal clamps 12 and 14. Tube 16 is now in the grip of weld clamps 18 and 20 where tube 16 is cut and deburred, if necessary. A similar operation is performed on a tube 61. The ends of tubes 16 and 61 are disposed in opposed relationship by weld clamps 18 and 20 where the tubes 16 and 61 are welded together.

Additionally, Benway et. al. describes a clamping device for holding a cylindrical work piece including a tube clamp assembly 10. The tube assembly 10 includes a pair of clamping halves 22 and 24. Each of the clamping halves 22 and 24 carries a rigid

collet elements 48 and 50 connected to their respective clamp half by socket head machine screws. Thus, neither Flowers et. al. nor Benway et. al. describe, show or suggest a plurality of clamping blocks including a first positioning system and a welding cassette having a pair of second positioning systems for cooperating with the first positioning systems.

Therefore, for the reasons set forth above, Applicants submit that Claim 21 is patentable over Flowers et. al. in view of Benway et. al..

For the reasons set forth above, Applicants respectfully request that the §103 rejections of Claims 1, 6, 8, 9, 13, 16 and 21 be withdrawn.

9. Claim 2 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Flowers et. al. (U.S. Pat. No. 4,190,186) in view of Benway et. al. (U.S. Pat. No. 4,868,367) and Johnson (U.S. Pat. No. 5,383,503). This rejection is respectfully traversed.

Claim 2 depends directly from Claim 1. As set forth above, neither Flowers et. al. nor Benway et. al. describe, show or suggest the limitations recited in Claim 1.

Additionally, Johnson does not describe, show or suggest the limitation recited in Claim 1. Rather, Johnson describes a guide assembly 10 for guiding the movement of a hand held router relative to a work piece. The guide assembly 10 includes a base 12 above which is supported a rigid, upper frame assembly 14, which carries a removable guide template 16. The guide template 16 is provided with an open pattern formed through the guide template 16 and adapted to be engaged about its inner periphery by a router guide sleeve to guide the manual movement of a router. Thus, neither Flowers et. al., Benway et. al. nor Johnson describe, show or suggest the limitations recited in amended Claim 1.

Therefore, for the reasons set forth above, Applicants submit that Claim 1 is patentable over Flowers et. al. in view of Benway et. al. and Johnson. When the recitations of Claim 2 are considered in combination with the recitations of Claim 1, Applicants respectfully submit that Claim 2 is likewise patentable over Flowers et. al. in view of Benway et. al. and Johnson.

For the reasons set forth above, Applicants respectfully request that the §103 rejections of Claim 2 be withdrawn.

10. Claim 3 and 4 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Flowers et. al. (U.S. Pat. No. 4,190,186) in view of Benway et. al. (U.S. Pat. No. 4,868,367) and Burns (U.S. Pat. No. 4,290,291). This rejection is respectfully traversed.

Claims 3 and 4 depend directly from Claim 1. As set forth above, neither Flowers et. al. nor Benway et. al. describe, show or suggest the limitations recited in Claim 1. Additionally, Burns does not describe, show or suggest the limitation recited in Claim 1. Rather, Burns describes an apparatus 11 for holding in alignment a stack of stator laminations 13 so that clamp bolt holes therein are accurately aligned. The apparatus 11 includes a precision four post die set that includes a lower die shoe 17. Anchored to the lower shoe 17, is a lower block 22 which has anchored therein bullet nose pins 23 which simulate the number, size and shape of bolts that will be used in mounting stator laminations 13 in a compressor housing. Thus, neither Flowers et. al., Benway et. al. nor Burns describe, show or suggest the limitations recited in amended Claim 1.

Therefore, for the reasons set forth above, Applicants submit that Claim 1 is patentable over Flowers et. al. in view of Benway et. al. and Burns. When the recitations of Claims 3 and 4 are considered in combination with the recitations of Claim 1, Applicants respectfully submit that Claims 3 and 4 are likewise patentable over Flowers et. al. in view of Benway et. al. and Burns.

For the reasons set forth above, Applicants respectfully request that the §103 rejections of Claims 3 and 4 be withdrawn.

CONCLUSION

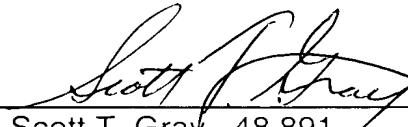
Applicants gratefully acknowledge the allowance of Claims 17-20.

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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